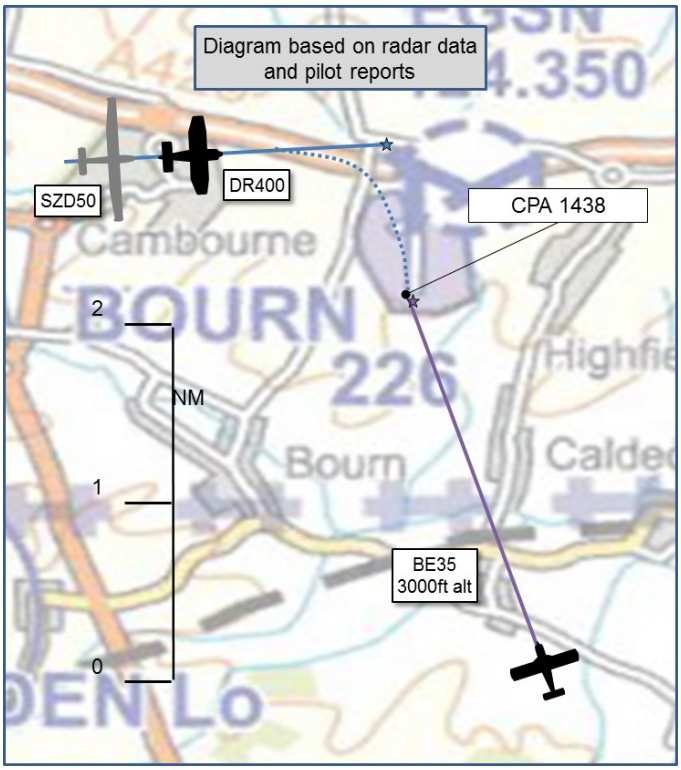
AIRPROX REPORT No 2016024

Date: 28 Feb 2016 Time: 1438Z Position: 5212N 00003W Location: Bourn Airfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	SZD50	BE35
Operator	Civ Trg	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	Listening
Provider	Gransden Lodge	Duxford
Altitude/FL	NK	3000ft AMSL
Transponder	Not Fitted	On / S
Reported		
Colours	White / Red	White / Blue
Lighting	None	Strobe
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3500ft	3000ft
Altimeter	QFE	QNH (1023hPa)
Heading	135°	340°
Speed	55kt	140kt
ACAS/TAS	FLARM	TCAS I
Alert	Unknown	None
Separation		
Reported	200ft V/0m H	300ft V/0.5nm H
Recorded	NK	



THE SZD50 GLIDER PILOT reports that he was carrying out a training flight as part of an annual refresher course for continuation training in aero-towing, stall awareness, spin recovery and circuit planning. The tow plane was a DR400. The tow combination departed Gransden Lodge at 1431, flew north then east, and initially climbing at between 300-800 ft./min to 3,700ft AAL. At 1437, heading 090°, the DR400 pilot initiated a 200ft descent on tow in order to practice this manoeuvre. At 1438, the tow-pilot gave a pre-arranged wave-off signal (rocking wings), at which point he released the tow rope and initiated a gentle turn to the right. Both pilots in the glider then simultaneously sighted a V-tailed, white, single-engine GA aircraft on a reciprocal course perhaps 200-300 metres away and perhaps 200 feet below; this aircraft flew directly under the glider without varying course. From first sighting to losing sight underneath the glider took perhaps 5 seconds. There was no lateral separation. After release, the pilot of the DR400 continued on roughly the same course, while descending over the south end of Bourn Airfield, before turning right. The DR400 pilot reports that he did not see the other aircraft at any stage.

He assessed the risk of collision as 'Low'.

THE BE35 PILOT reports that he was climbing in good VMC. He had adapted his track to remain clear of Cambridge ATZ and was either at, or approaching, his selected cruising altitude. Maintaining a lookout, he observed a glider under tow passing from left to right. He believed his track would take him behind the glider. Shortly thereafter, the glider released; he observed the glider in a right turn towards him, the tug aircraft begin a descent, and then the glider passed down his left hand side. He had not anticipated the glider would release at the point that it did but, in hindsight, he assumed a release height of 3000ft was customary. He had no TCAS alert, and therefore assumed that neither the glider nor tug were transponding.

He assessed the risk of collision as 'Low'.

Factual Background

The weather at Cambridge was recorded as follows:

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METAR EGSC 281420Z 02012KT 9999 BKN045 07/05 Q1023
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Analysis and Investigation

UKAB Secretariat

The SZD50 and BE35 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. The BE35 pilot was required to give way to the DR400/SZD50 combination as 'aircraft which are seen to be towing other aircraft or objects' in accordance with the right-of-way rules as follows[2]:

> (a) The aircraft that has the right-of-way shall maintain its heading and speed.
> (b) An aircraft that is aware that the manoeuvrability of another aircraft is impaired shall give way to that aircraft.
> (c) An aircraft that is obliged by the following rules to keep out of the way of another shall avoid passing over, under or in front of the other, unless it passes well clear and takes into account the effect of aircraft wake turbulence.
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> (1) *Approaching head-on.* When two aircraft are approaching head-on or approximately so and there is danger of collision, each shall alter its heading to the right.
> (2) *Converging.* When two aircraft are converging at approximately the same level, the aircraft that has the other on its right shall give way, except as follows:
>
> (i) power-driven heavier-than-air aircraft shall give way to airships, sailplanes and balloons;
> (ii) airships shall give way to sailplanes and balloons;
> (iii) sailplanes shall give way to balloons;
> (iv) power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects.

Comments

BGA

It's always wise to give glider/tug combinations a wide berth; they have limited manoeuvrability and, as seen here, the releasing glider will turn away from the tug immediately to rapidly increase separation. After release, the tow rope will usually be trailing below the tug so passing close below & behind is inadvisable. There is no 'customary' release height for gliders flying outside an organised competition.

Summary

An Airprox was reported when a SZD50 and a BE35 flew into proximity at 1438 on Sunday 28th February 2016. Both pilots were operating under VFR in VMC, the SZD50 pilot in receipt of an Air/Ground Service from Gransden Lodge and the BE35 pilot listening out on Duxford's frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft.

The Board first discussed the issues surrounding glider aero-tow operations. The gliding member stressed that gliders can release at any height from the tow aircraft and that there was not a 'customary release height' as such, contrary to the perception of the BE35 pilot. That being said, he acknowledged that aero-tows usually did operate to pre-agreed release levels, and that this could result in them using

[1] SERA.3205 Proximity.
[2] SERA.3210 Right of Way

the same level from tow-to-tow. The important point to note was that powered-aircraft pilots should expect gliders to release at any time, and so should ensure they were always sufficiently separated in order to allow for this. He went on to say that normal release procedure is for the tow aircraft to descend upon glider release, and the glider to climb, if possible, and turn away from the tow aircraft to present a visible profile, as had happened in this case. Board members recalled that they had previously recommended that the CAA, through GASCo, promote the education of GA pilots in glider operations (and vice versa through the BGA) since this would be beneficial to all parties; this was an ongoing requirement that needed regular refreshing.

Members went on to discuss the fact that the problem with TCAS and FLARM was that they did not communicate with each other. Ideally, Airborne Collision Avoidance Systems (ACAS) should have a universal interoperability between the different systems and be of relatively low cost, weight and power usage to increase their suitability of use in light aircraft and gliders. That being said, they noted that the BE35's TCAS should have provided warnings on the DR400 if this aircraft had had its Mode C/Alt selected. Unfortunately, the Board had no information on the DR400's actual SSR selections, but they opined that this incident was a timely reminder to aero-tow pilots that selection of Mode C/Alt was potentially beneficial in providing pilots who had TCAS fitted to their aircraft with electronic warnings of the aero-tow combo while they were in the tow configuration, and also for the tow aircraft as it dynamically manoeuvred after release.

The Board then discussed at great length the difference in reported horizontal separation between the two aircraft as stated by the SZD50 and BE35 pilots. Without radar data to verify the position or height of the aircraft they had to rely on both pilots' reports; unfortunately, although their reported vertical separation was similar, the reported horizontal separation was widely disparate. In weighing up the reports, members noted that the BE35 had seen the SZD50 in plenty of time to carry out any avoiding action and that the pilot had felt his current track would take him behind the glider under tow. In contrast, the SZD50 pilot had not seen the BE35 until he had released and begun his turn away from the tow aircraft and the Board wondered whether he had been startled into judging the separation as less than it actually was. Pilot members also noted that the DR400 pilot had not seen the BE35 at all, and opined that this was probably indicative of the BE35 passing behind his 3-9 line.

With all that having been considered, the Board then turned to assess the cause and risk of the Airprox. Although it was difficult to determine the actual separation, the Board members believed that the BE35 pilot had had the SZD50 in sight but had been caught unawares when the SZD50 pilot had released and turned towards him. Notwithstanding, they felt that the BE35 pilot should have given the aero-tow combo a wider berth and, given that the SZD50 pilot was surprised to encounter the BE35 so close to release, they decided that the cause of the Airprox was that the BE35 pilot had flown close enough to the SZD50 to cause its pilot concern. However, they agreed that because the BE35 pilot had had the SZD50 in sight at all times, there was in fact no risk of collision and they therefore assessed the degree of risk as Category C

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The BE35 pilot flew close enough to the SZD50 to cause concern.

Degree of Risk: C.